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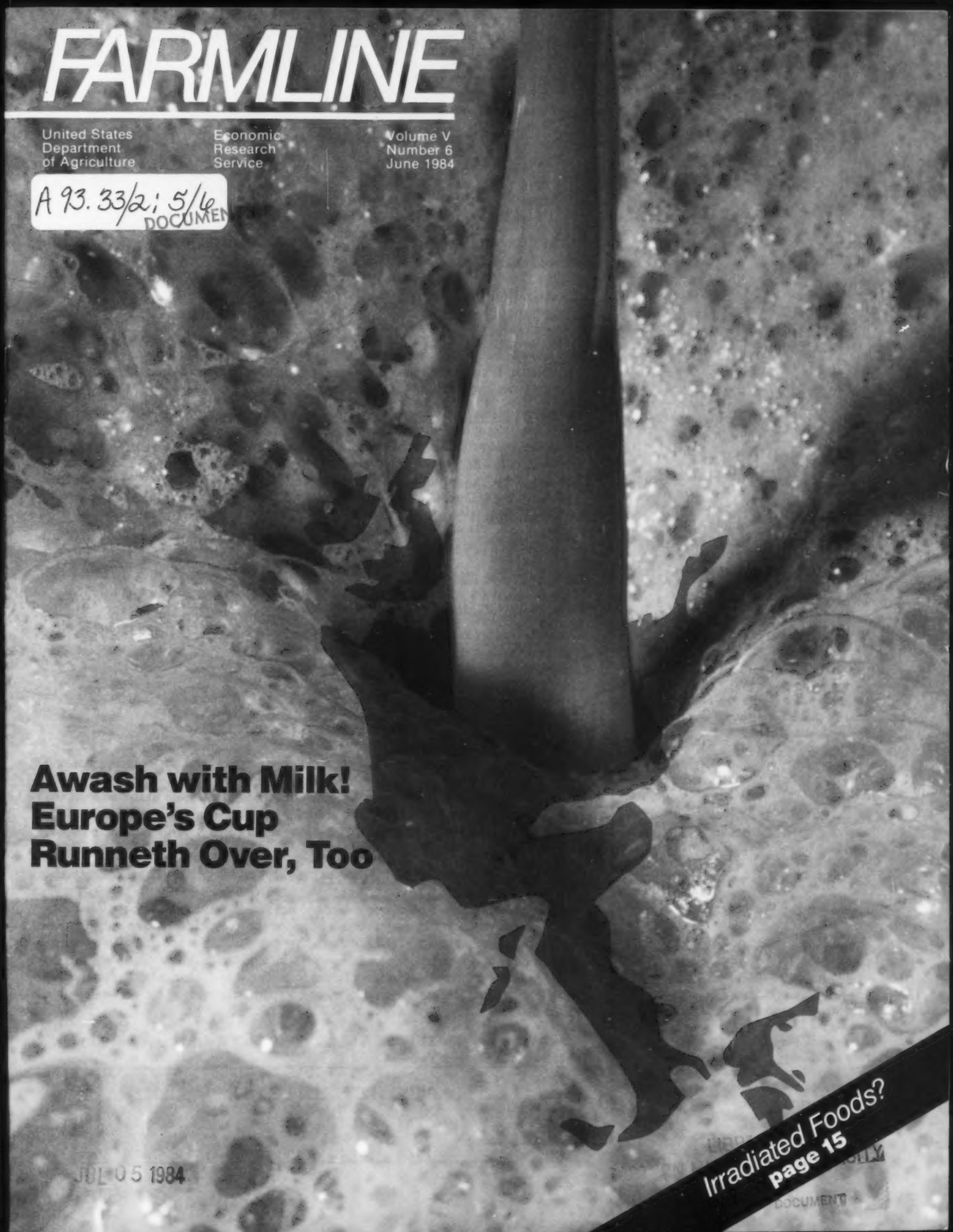

Awash with Milk! Europe's Cup Runneth Over, Too

Irradiated Foods? page 15

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PERSPECTIVES

LATEST EXPORT FIGURES SHOW VALUE UP, VOLUME DOWN from last year's levels. That's the story for the first 6 months of the current fiscal year, which began last October. And that's the way the year is likely to end up for U.S. agricultural exports, says analyst Pat Haslach of USDA's Economic Research Service.

Export earnings may reach $38 billion, according to Haslach. In fiscal 1983, sales were valued at only $34.8 billion, the lowest since 1979. This year poses no challenge to the 1981 record, but at least earnings are headed back in the right direction. Not so for export volume. It's expected to decline for the fourth straight year, dropping about 3 million tons from last year's 144.8 million.

Big volume gainers are coarse grains and cotton. They'll be outweighed by the big losers: soybeans, soybean cake and meal, sunflowerseed, and rice. However, higher prices have a way of turning volume losers into value gainers. Take soybeans. Sharply higher prices are boosting our export receipts from soybeans even though Japan and Europe are reacting to the prices by buying less. Despite the predicted drop in sales volume—down almost 4 million tons from 1983—soybean exports could bring in a half-billion more dollars than they did last year.

The U.S. share of total world trade volume may come in below 40% for wheat, about the same as last year but down from an average of 45% in the 3 previous years. The U.S. share of trade in corn and other coarse grains is expected to remain near the 60% level of the past 2 years. The U.S. share of world soybean trade is forecast at about 80%; cotton at about 35%; and rice at less than 20%.

Major markets for U.S. farm products so far this year (in order of spending) are Japan, the Netherlands, the USSR, Mexico, West Germany, South Korea, and Canada. Major fiscal 1983 buyers were Japan, the Netherlands, Canada, Mexico, West Germany, Taiwan, and Spain.

Two of our biggest customers, Japan and the USSR, will each be boosting their spending on U.S. farm products by a billion dollars or more from 1983 levels. Both corn and wheat sales to the Soviets should exceed the minimum quantities set in the new U.S.-USSR trade agreement. Soybean sales to the Soviets are way up, and cotton is also selling well. Japan is expected to spend roughly $6.9 billion on U.S. farm products, 18% of our total receipts. Other growth markets include Africa, the Middle East, and Southeast and East Asia. China's purchases may climb to around $800 million, up from $550 million last year but nowhere near the $2.2 billion record for U.S. farm exports to China, set in fiscal 1981.

Are U.S. exports back on the growth track? It's far too early to predict the path that exports will take in 1985 or beyond, says Haslach. After rising steadily for 12 straight years, the value of U.S. farm exports declined in 1982 and 1983. Now that global economic growth is picking up again, there's hope for still greater demand ahead. However, analysts caution that many of the problems that depressed sales are still with us, including a strong U.S. dollar, huge debts in many nations, and reduced credit flows. They say high U.S. interest rates pose a serious threat to recovery in debtor nations, sustained growth in industrialized nations, and a more competitively valued U.S. dollar on world money markets.

Export Value May Rise $3 Billion from Last Year, But Volume Is Expected To Drop for the Fourth Straight Year

	Fiscal years						
	1978	1979	1980	1981	1982	1983	1984 forecast
Value, in billions of dollars	27.3	32.0	40.5	43.8	39.1	34.8	38.0
Volume, in million metric tons	131.3	137.4	163.9	162.3	157.9	144.8	142.0

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AGRICULTURE . . . NATURAL RESOURCES . . . RURAL DEVELOPMENT
Practical economic intelligence from USDA's Economic Research Service

FEATURES

Quotas Tell EC Dairy Farmers: "Cut Back" *by Reed Friend and Ron Trostle* 4

U.S. dairy surpluses are no match for those across the Atlantic. There, the 10-nation European Community is resorting to quotas to turn the tide on an overflow of milk. The quotas won't eliminate surplus production, but they'll probably trim output enough to affect EC demand for American feedstuffs.

Minifarming for Pleasure, Not Profits *by Ellen Banker* 10

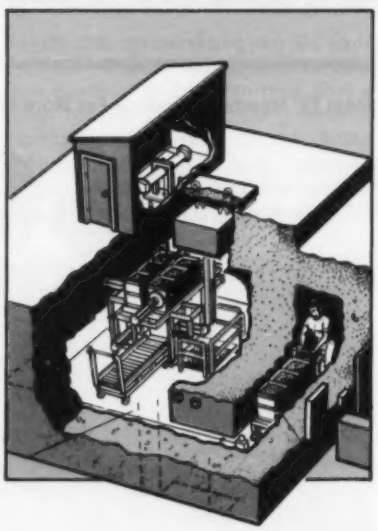
Minifarms are the smallest of the small farms. They number in the hundreds of thousands, and they play an important role in rural communities. But are they commercial farms? The statistics suggest they are not. Their contribution to commercial food production is barely measurable, and they're generally run by middle-class families who farm for pleasure, not their livelihood.

Brazil's Economic Troubles Take a Toll on U.S. Trade *by Doug Martinez* 12

U.S. agriculture has a big stake in Brazil's battle to revive a stumbling, debt-drained economy. In the 1970's, Brazil not only became a competitor in world soybean markets; it also grew into a major U.S. farm customer. Since then, economic problems have taken a severe toll on its agricultural imports—especially those from its largest supplier, the United States.

Are We Ready for Irradiated Foods? *by Pat Creech* 15

A not-so-new food preservation process is getting a boost from an unusual ally, EDB. Irradiation is viewed by many experts as a safe alternative to chemical fumigants and preservatives. Not everyone is convinced, but the momentum—for now—seems to be running in favor of low-dose irradiation for certain food uses. If FDA goes ahead with approval, the ultimate test may shift to the marketplace.



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Quotas Tell EC Dairy Farmers: "Cut Back"

U.S. dairy surpluses are no match for those across the Atlantic, where the 10-nation European Community is trying to turn back a tidal wave of milk.

In the following article, economists Reed Friend and Ron Trostle of the Economic Research Service examine recent dairy policy decisions in the European Community (EC) and the implications of those decisions for the EC and the United States.

In late March, after nearly a year of debate, agricultural ministers of the European Community agreed on a variety of farm policy and price reforms. Dairy received special attention, with two related decisions that mark a significant departure from the past.

The ministers voted to reduce production by imposing milk delivery quotas and to freeze the official target price for milk at last year's level.

Up until this time, EC dairy farmers could produce unlimited quantities at guaranteed prices. The guaranteed support prices were routinely boosted every year, providing a strong incentive to expand output.

If the resulting EC dairy problem found a sympathetic ear in the United States, American farmers can hardly be pleased with the remedy. U.S. agriculture has little to gain and somewhat more to lose from the recent EC actions.

These actions are expected to reduce EC milk production by about 5 percent, not nearly enough to eliminate the surpluses or curtail subsidized EC dairy exports. EC production exceeds usage by an estimated 23 percent.

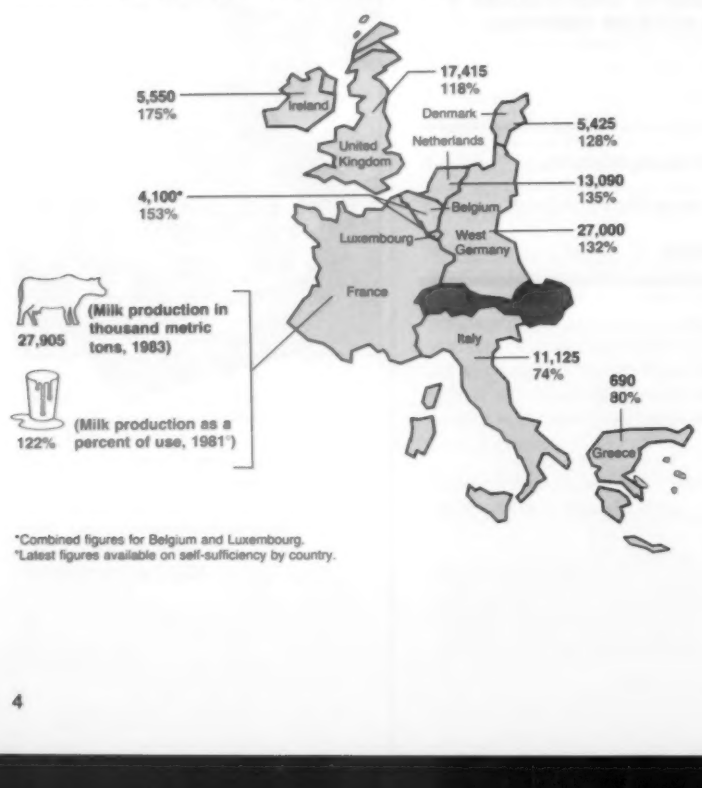
The quotas, however, will encourage the slaughter of less productive cows, putting more beef on world markets in the months ahead. Fewer cows and lower feeding rates also suggest some reduction in EC demand for feedstuffs, including corn gluten feed and citrus pulp imported from the United States.

Dairying, EC Style

The EC has more than twice as many milk cows as the United States and produces roughly 75 percent more milk. That's far too much for a population of around 285 million, 25 percent larger than the U.S. population.

Part of the excess production goes into dairy products that are subsidized for sale outside the EC. In 1983, the EC exported nearly 3 million tons of cheese, nonfat dry milk, and butter—more than

Most EC Members Produce Far More Milk Than They Can Use

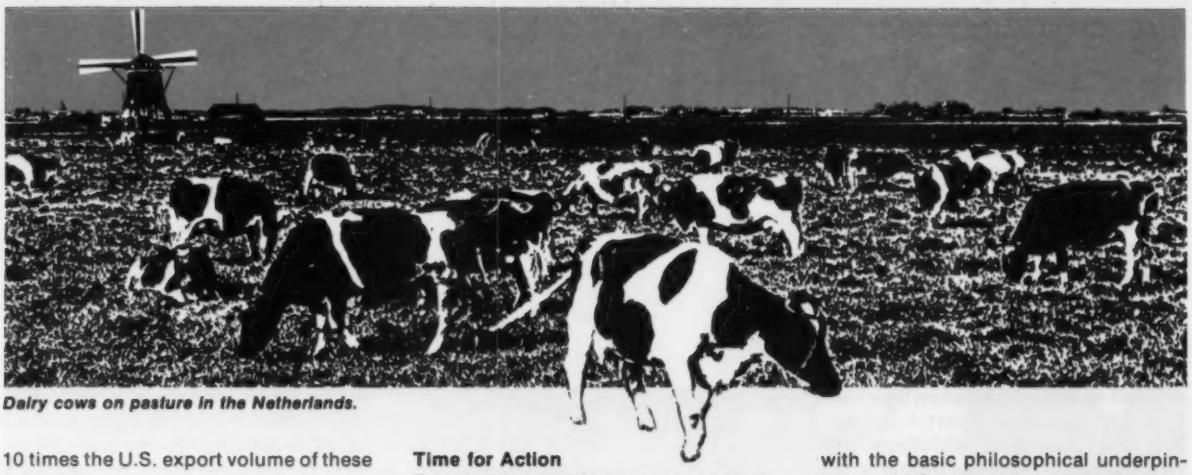


*Combined figures for Belgium and Luxembourg.
[1]Latest figures available on self-sufficiency by country.

Dairy Sector Comparisons for 1983: EC versus USA

	European Community	United States
Cow milk produced (million metric tons)	112.1	63.5
Number of milk cows (millions)	25.5	11.1
Average yield per cow (pounds)	9,689	12,587
Average number of cows per farm	14.3	35.7
Annual rate of increase in milk production since 1970 (percent)	2.1	1.5
Milk target price ($ per 100 lbs.)	10.91[1]	12.60
Butter stocks (thousand tons)	866	165
Nonfat dry milk stocks (thousand tons)	1,006	620
Per capita butter consumption (pounds)	14.1	5.1
Per capita liquid milk consumption (pounds)	278	210
Butter exports (thousand tons)	804	34
Cheese exports (thousand tons)	1,178	17
Nonfat dry milk exports (thousand tons)	957	234

[1]At 1980 exchange rates, the current EC target price would be $17.29.



Dairy cows on pasture in the Netherlands.

10 times the U.S. export volume of these products.

Even with a large export program, surplus stocks are huge and growing. Inventories of nonfat dry milk and butter reached a record 1.9 million tons in December 1983, compared with U.S. butter and dry milk stocks of less than 800,000 tons. To help finance the surpluses, EC farmers pay a 2-percent "coresponsibility" tax on their deliveries to dairy processors, but the tax hasn't cut production.

Milk output has increased at an average rate of 2.1 percent per year since 1970, with 1983's 3.7-percent gain well above the average. Like their American counterparts, EC farmers have boosted the productivity of their cows through genetic improvements in the herd, as well as higher yielding management and feeding practices. While milk cow numbers held fairly steady at around 25½ million, annual yields rose from 6,929 pounds of milk per cow in 1970 to 9,689 pounds last year.

Excess production in the dairy sector, and in several other commodities, has a price. The price has escalated so much and so rapidly that it precipitated a budget crisis in the EC last year—a situation that is not yet fully resolved. And dairy is the EC's most expensive commodity price support program.

Costs for disposing of surplus butter and nonfat dry milk are estimated at more than $4 billion for 1983, about 30 percent of total EC price support expenditures. In 1975, the tab was only $1.1 billion. Three-fifths of 1983's expenditures went for storage, export market development, and subsidies for feed use of skim milk and domestic butter consumption. Two-fifths went for export subsidies.

Time for Action

Faced with mounting surpluses and rising costs that were bumping up against budget ceilings, the EC recognized that it had to take action. Of the two dairy program decisions, the quota on milk deliveries is the more significant.

The decision not to raise dairy support prices in 1984/85 is largely symbolic because the target price is set in European Currency Units (ECUs), an artificial currency that is based on weighted averages of members' currencies. When ECUs are converted to francs, pounds, lire, and other national currencies that farmers actually receive, milk prices will rise in most of the EC countries. The increases, however, are not enough to keep up with costs of production as they have usually been in previous years.

The approval of 5-year quotas on milk deliveries to processors represents a much sharper break with the past—and with the basic philosophical underpinnings of EC agricultural policy. Sugar is the only other commodity produced under quota, and the EC has steadfastly resisted the use of direct supply management tools. EC agricultural policy originated in an environment of food shortages, and it was intended to stimulate, not inhibit, production growth.

Under the quota system, producers will receive the guaranteed price support for milk deliveries falling within established quotas. Milk deliveries above the quota will be subject to a levy or tax amounting to 75 percent of the milk target price.

For the 1984/85 marketing year, EC agricultural ministers approved an overall milk quota of 99.2 million tons, plus a small reserve divided among Ireland, Northern Ireland (part of the United Kingdom), and Luxembourg. Together, the quota and the reserve amount to 99.6 million tons, 4 percent below the EC's

Customer and Competitor

Changes in EC agricultural policies are watched closely in the United States for at least two good reasons. As a group, the members of the European Community make up the world's largest customer for U.S. farm products. As a group, they also make up one of our most formidable competitors in world markets.

Over the last 3 years combined, U.S. agricultural exports to the EC were worth more than $25 billion, roughly 22 percent of our exports to all markets. In the early 1970's, the share was even larger—about 30 percent. Grains, oilseeds, and other feedstuffs have traditionally accounted for about 70 percent of the total. Fruits, vegetables, tobacco, and cotton have also been important.

On the other side of the coin is competition from the EC. U.S.-EC competition for world agricultural markets has heated up with the rise in EC surpluses and the decline in world economic activity. The two compete, for example, to sell wheat, flour, and poultry meat to North Africa and the Mideast; wheat to China; wheat and feed grains to the USSR; and wheat and flour to Latin America.

milk deliveries in 1983. For the next 4 years, the overall quota drops to 98.4 million tons.

Most of the individual quotas for member nations are based on their 1981 milk deliveries, plus about 1 percent. This means a substantial cutback from 1983 production for West Germany, the United Kingdom, and the Netherlands. For Ireland, Italy, and Greece, the base is 1983 deliveries, with a small upward adjustment.

The establishment of these quotas is not a minor accomplishment, given the differences in interests and the intense debate that preceded agreement. Ireland, for example, had asked that it be completely exempt from any quota because its dairy sector has been slow to develop and could be frozen at a lower state of technology relative to other EC members. In one of many compromises, Ireland was guaranteed that its quota would not be reduced.

The French had argued that large, intensive milk producers should be penalized under the quotas. They contended that large producers are primarily responsible for increased EC milk supplies. France's proposal for a graduated tax, with exemptions for smaller producers, was countered by other EC members whose dairy sectors—unlike that of France—are made up of the larger sized operations.

Measuring the Impact

The impact of the delivery quotas can be viewed from different perspectives because there are implications both for the EC dairy sector and for other nations, including the United States.

Within the EC, the relatively small reduction in milk production stemming from the quotas is not expected to trim the number of dairy farms. An estimated one-third of EC farmers produce milk for sale off the farm. Pressure to support farm incomes by maintaining high support prices for milk will, therefore, remain strong, and the EC may be more likely to give in to such demands under the security umbrella of a quota.

Also, quotas have to be set for individual farms, so the value of having a quota will be capitalized into the value of existing dairy farms. That will increase so-called structural rigidities in the dairy sector, making entry into dairy farming more expensive and more difficult.

To meet on-farm needs and to ensure that they fulfill their quotas, EC dairy farmers will probably continue to produce more milk than they deliver to dairies. However, with the 75-percent tax on additional marketings, milk producers can be expected to cut their output close to their quotas.

In 1983, milk deliveries from EC producers to dairy processors totaled 104 million metric tons, about 93 percent of the 112 million tons of milk produced. Domestic use, excluding stock accumulation, is estimated at 91 million tons, so the EC produces about 21 million tons more than it needs to meet internal demand. If the quota reductions in deliveries translate into a comparable cut in production, the surplus will be reduced only about one-fourth.

Consequently, the EC will still be burdened with large surpluses, and it will remain the world's largest exporter of dairy products.

Trade Implications

The reductions in milk output will be achieved through a culling of less productive cows and a cutback in the feeding of concentrates. Culling is likely to get the most emphasis because the program lasts for 5 years. Most cull cows will probably be sold for slaughter rather than converted to suckling cows because the typically small EC dairy farms do not have the grazing land available for producing beef animals.

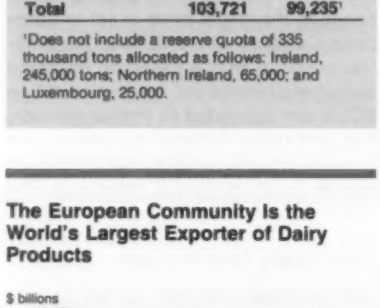
With fewer EC dairy cows on feed and more slaughter cow meat coming to market, the direct trade implications for exporters of feed and lower priced beef are not favorable. If many cows are

Under the Quotas, Most Nations Will Be Required To Reduce Milk Deliveries

	Deliveries in 1983/84	Quotas for 1984/85
	thousand metric tons	
Belgium	3,210	3,138
Denmark	5,226	4,932
France	26,100	25,585
Greece	440	472
Ireland	5,270	5,280
Italy	8,290	8,323
Luxembourg	284	268
Netherlands	12,850	12,052
United Kingdom	16,864	15,698
West Germany	25,187	23,487
Total	**103,721**	**99,235**[1]

[1]Does not include a reserve quota of 335 thousand tons allocated as follows: Ireland, 245,000 tons; Northern Ireland, 65,000; and Luxembourg, 25,000.

The European Community Is the World's Largest Exporter of Dairy Products



Based on 1980 data.

The European Community has more than twice as many dairy cows as the United States.

slaughtered, this could depress world prices and add to the already burdensome EC stocks of beef.

More significant to the United States is the impact on EC imports of feedstuffs for its dairy herd. It must be noted that not only will milk production be reduced, but the 2 to 4 percent annual growth rate in milk output, characteristic of the last decade, will cease.

EC dairy rations make heavy use of corn gluten feed and citrus pellets imported from the United States. Last year, the EC purchased 3.8 million tons of U.S. corn gluten feed and meal and a half-million tons of U.S. citrus pellets.

Another U.S. concern is the recent EC decision to negotiate controls on imports of U.S. corn gluten feed through the GATT (General Agreement on Tariffs and Trade). The United States has refused to voluntarily limit its exports and has lodged a strong objection to the EC action.

The only potential benefit to U.S. agriculture relates to U.S. dairy exports, which are relatively small in volume and value. And even this benefit won't materialize unless the EC cutback in milk production eventually leads to reduced dairy exports and improved world prices. □

[*Written by economists Reed Friend and Ron Trostle of the Western Europe branch, International Economics Division, Economic Research Service.*]

The Price of Success

It's called a Common Agricultural Policy (CAP for short), and it was shaped in the 1960's and early 1970's when Western Europe was heavily dependent on imported food.

The European Community's CAP was designed to boost agricultural production and assure good incomes for Western Europe's millions of small farmers. It provided for a market intervention system to maintain high farm prices; variable levies to protect EC producers from cheaper imports; consumption subsidies to help dispose of surplus commodities on EC markets; and export subsidies to help dispose of surpluses on world markets.

The secure, profitable environment provided by CAP during the last 15 years has promoted investment in agriculture and fostered rapid gains in farm productivity. Production growth has outpaced consumption for nearly all commodities, resulting in overall self-sufficiency for the EC and large surpluses in major commodities.

EC expenditures on agriculture also rose rapidly, approaching the limit on financial resources imposed by the EC treaty. In 1983, total expenditures climbed to a record $25 billion, with 65 percent of the money going to agriculture.

In order to stay within its budget, the EC postponed some expenditures to 1984. This year, the EC is forced to confront its budget crisis. For the first time in its history, it has reduced support prices for a broad range of commodities—at least in terms of ECUs. The EC has also asked for additional funds from member governments.

A decision on the extra funding for agriculture will be made later this year. Prospects for approval appear good, although the two major contributors to the budget, West Germany and the United Kingdom, may demand some concessions. If the EC successfully resolves its budget crisis as expected, large expenditures for export subsidies will continue, and the EC will remain a strong competitor with U.S. agriculture in world markets.

AGRICULTURAL ROUNDUP

Rice: Small Is Bountiful

Within the next few years, the U.S. rice industry could witness another green revolution.

The reason: new, higher yielding semi-dwarf varieties of long grain rice, according to USDA economist Barbara Stucker of the Economic Research Service.

These new varieties, Stucker says, have a shorter growing season, better resistance to disease, and the potential for at least a 20-percent increase in yields. In addition, the pint-size plants are easier to harvest. Average-size rice stalks tend to bend under their own weight, and mechanical harvesting is sometimes impossible.

There is one disadvantage related to their height: Semi-dwarf varieties are more likely to be overrun by weeds and grasses, making weed control more critical and, hence, more expensive. But increased yields will normally offset the higher herbicide costs, Stucker says.

The latest semi-dwarf release—Lemont—appears to be the most profitable long grain variety tested so far, according to Stucker. In 1983 field demonstrations at the Texas Agricultural Experiment Station in College Station, Tex., Lemont yielded 1,100 pounds, or 22 percent, more per acre than any existing long grain variety. Input costs were only about 12 percent higher.

Stucker expects rice producers to rapidly adopt Lemont, although 1984 planting will probably be a modest 10,000 acres. "But, by 1987," she says, "we could see at least 1.3 million acres planted—300,000 acres in Texas alone, and over a million acres in Arkansas, Louisiana, Mississippi, and Missouri."

How big an impact could this much Lemont acreage have on rice production?

Stucker says it would be considerable.

Suppose growers had planted 1.3 million acres of Lemont out of the 2.5 million actually planted to long grain in the 1981/82 season (the year before the acreage set-asides of the Payment-In-Kind program).

"Yields would have increased by around 20 percent," Stucker says, "from the actual 4,449 pounds per acre to about 5,550 pounds." She notes that the 1981/82 long grain crop set records for acreage, yields, and production (at 110 million cwt).

Stucker says Lemont could help ailing rice producers who have been facing sagging prices and weak demand.

"Despite a dramatic increase in the long grain crop, production costs per pound would decline enough so farmers could still make more money even if farm prices dropped."

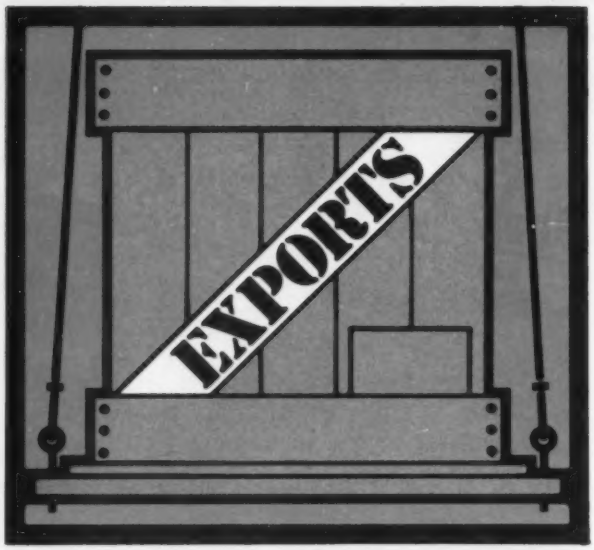
Export Profile of Honduras

"Honduras has been a modest but steady importer of U.S. farm products and may buy as much as $75 million worth by 1990, up from $51 million in 1980."

That's the assessment offered by economist Christine Bolling in an export market profile on Honduras recently published by USDA's Economic Research Service.

At the current growth rate of 3 percent per year, the population of this Central American country should increase to 5 million by 1990. That means a growing demand for U.S. staples such as wheat.

Honduras already relies on the United States for virtually all of its wheat imports, which amounted to nearly 85,000 tons in 1982. By 1990, Bolling predicts, U.S. sales could rise to 95,000 tons or more.



The United States is also the source for most Honduran purchases of corn, soybean meal, other livestock feeds, apples, grapes, fresh pork, and imported cattle.

About 75 percent of its canned fruit imports are from the United States, but the U.S. share for other processed and high-value foods is very small. Imports of dairy products, particularly, are dominated by the European Community countries.

Bolling advises U.S. farm exporters to learn the limitations of the Honduran market before beginning any sales campaigns.

First is the fact that "Honduras is the poorest country in Central America. Its 1980 per capita income was only $692," says Bolling.

"Consumption patterns will continue to be quite traditional and simple for much of society. Refrigeration is limited, and traditional methods of food preparation are not compatible with many of the U.S. high-value, processed foods, such as fresh-frozen meats, fruits. and vegetables."

Other barriers to high-value farm products are stiff import levies and taxes, which are an important source of government revenue and a means of reserving foreign exchange earnings for essential imports. Moreover, these trade barriers are intended to encourage the development of a domestic food processing industry and increase employment, according to Bolling.

She suggests that U.S. officials and exporters emphasize the importance of particular exports that fit in with Honduran development plans.

"Information on improved technology and the use of modern inputs such as feedstuffs could lead to increased imports, particularly at a time when Honduras is developing its poultry industry," she says. "This would also have appeal to Honduras because it promotes economic growth and employment."

Furthermore, "U.S. exporters may find some small but growing possibilities for shipments of chicks for Honduras' poultry industry. Despite a limited income growth, the country is increasingly turning to poultry as a source of low-cost animal protein."

A copy of Bolling's 18-page report, ***Honduras: An Export Market Profile****, can be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Cost is $1.50. Ask for the report by title and stock number SN-001-000-04397-8.*

REPORTS IN THE NEWS

Global View of Limits on Land

Meeting the world's future food needs will depend less on cultivating more land than on improving productivity through technological progress. The reason: an increasing disparity between world population growth and cropland expansion.

That's the view of economists Francis Urban and Thomas Vollrath of USDA's Economic Research Service.

"Agricultural research and development, which has declined in some countries, needs to be resurrected," say the authors of a new ERS report.

Cropland area has expanded steadily, particularly in less developed nations, but the rate of expansion has been leveling off. Only 4 to 5 percent more land may be brought into global crop production by the year 2000, while world population is expected to increase about 40 percent to over 6 billion.

The best land is already in agricultural use, and further expansion of cropland will meet with serious difficulties. "Most countries have little if any area for cropland expansion, while others with a fairly abundant land area are unable to expand because of poor climates or poor land quality," Urban says. He puts South Asia and Eastern Europe in the first category; North Africa and East Asia in the second.

More than 40 percent of the land is devoted to crop production in South Asia and Eastern Europe, while in North Africa only 4.4 percent of the total land area is used for cropland. Desert comprises 80 percent of North Africa's land. In East Asia, 4.6 percent of the land is devoted to cropland, while a full 58 percent is suitable only for animal grazing because of a dry climate.

Patterns and Trends in World Agricultural Land Use *by Francis Urban and Thomas Vollrath. (Published April 1984; 32 pages of text and tables; GPO Stock No. 001-000-04409-5; $2.00.)*

Debt Breakdown

In three decades, from 1940 to 1970, the debts of U.S. farmers climbed from $10 billion to $53 billion. Just 13 years later, the total reached $216 billion.

Farmers' real estate debts on January 1, 1983, amounted to $109.5 billion. Their debts from operating loans and other short-term borrowing totaled $106.8 billion.

Of the lenders, federal land banks carried about 43 percent of last year's real estate debt. Another 29 percent was owed to individuals, such as property owners who offer financing to buyers. The rest of the outstanding real estate debt was divided among life insurance companies, the Farmers Home Administration (FmHA), and commercial lending banks.

Iowa farmers had the largest real estate debt bill—nearly $8.8 billion at the start of last year. California was next at $8.6 billion, and Illinois was third at $6.3 billion.

In the category of short-term and intermediate-term (nonreal estate) debt, more than a third of the total was owed to commercial lending banks. Another 37 percent was about evenly divided between production credit associations and "individuals and others."

States at the top of the list in nonreal estate debt were Iowa and California at $8.8 and $8.1 billion, respectively; Texas at $7.6 billion; and Nebraska and Minnesota at $6.9 and $6.3 billion.

Interest rates on new farm loans varied by lender but held fairly stable through most of the 1970's. In the late 1970's, rates began to climb sharply, reaching their peaks in 1981 and 1982. Although interest rates dropped in 1983, they remained well above the levels of the early and mid-1970's.

Agricultural Finance Statistics, 1960-1983 *by George Amols and Wilson Kaiser. (Published April 1984; 53 pages of data tables; GPO Stock number 001-019-00336-7; $2.25.)*

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Trends in Interest Rates on New Farm Operating Loans

	Rural banks	PCA's	FmHA
	interest rates[1]		
1970	8.42	9.38	7.13
1971	8.16	7.20	6.38
1972	8.02	7.03	5.88
1973	8.55	8.90	6.75
1974	9.04	9.80	8.75
1975	8.99	8.56	8.50
1976	9.18	8.12	8.75
1977	9.18	7.93	8.00
1978	9.51	9.15	8.50
1979	11.80	11.00	10.16
1980	13.96	11.99	10.83
1981	18.85	15.71	14.50
1982	16.30	13.80	12.09
1983	14.10	11.82	10.25

[1]Rates shown are for fourth quarter of each year.

Minifarming Is for Pleasure, Not Profits

Charlie Mason rises shortly before 6 a.m., quickly showers, and gets into a suit and tie, like millions of other commuters. He drives about 45 minutes to his office in Burlington and puts in a full day as a computer analyst with a major U.S. corporation. If all goes well, Mason will be back home by 6 p.m., ready for an evening of more work, this time in coveralls and boots.

Mason runs one of the nation's half-million minifarms. He and his wife raise lambs for meat and wool on 110 rolling acres in a traditional dairying community in Vermont. They farm part-time for a variety of reasons. "Economically, sheep production has been on the decline for a long time," Mason says, "but I love it. Some people call my farm a hobby. But, I'll tell you, when you're out with a ewe lambing at 3 a.m. in the cold and the wet, it's work."

"Minifarm" is an informal term used to describe farms with gross sales of $1,000 to $2,499 a year. They fit in at the lower end of the more formal category of small farms with sales of less than $20,000 and more than $1,000 a year. It takes at least $1,000 in farm product sales to be counted as a farm at all.

The number of small farms has been declining for most of this century, but the rate of decline has slowed recently. Minifarms now account for about 21 percent of all U.S. farms.

While this may still sound impressive, it's not very significant economically. Less than 1 percent of the value of all farm products sold in the United States come from these farms.

Even so, minifarms are important to the agricultural economy, according to USDA economist Nora Brooks of the Economic Research Service. How? "In terms of community affairs, rural services, and even political clout," Brooks says.

However, she says, the minifarm would be better considered as a rural residence than as a commercial farm. For the most part, minifarms are not self-sustaining operations.

"There is simply not enough farm income left after operating expenses to cover fixed costs, pay the operator for his labor, and provide a return on invested capital," Brooks says. "Without large off-farm incomes, these operations would probably not continue from one year to another."

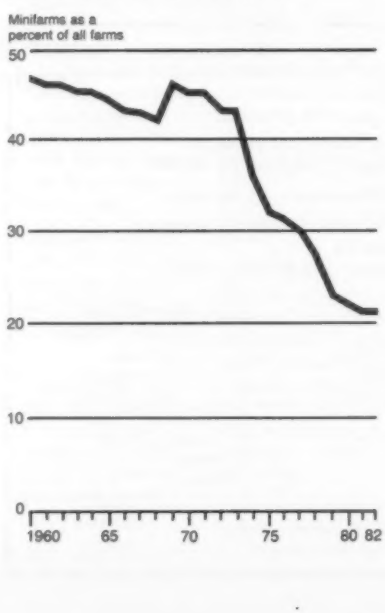
Of the operators who do not work off the farm, Brooks says, most are of retirement age and generally have the smallest operations. "This suggests that these minifarms are supported largely by retirement incomes."

How Minifarms Measure Up

	Minifarms	Other small farms	Larger farms
		Average per farm	
Acreage	76.6	182.0	840.5
Head of cattle	7.5	20.0	91.0
Sales	$1,152	$8,203	$111,173
Expenses	$1,454	$4,602	$61,639
Number of trucks and farm machinery	2.2	3.6	7.4
Age of operator	50.7	51.8	48.3
Percent of operators who work off the farm 200 or more days per year	58.4	44.2	13.1

Minifarms, sales of $1,000 to $2,499; other small farms, sales of $2,500 to $19,999; larger farms, sales of $20,000 or more.

The Decline In Minifarms Has Slowed In Recent Years



Minifarm Profile

Brooks developed a profile of minifarms by analyzing data from the 1978 Census of Agriculture.

In short, minifarms are generally owned by middle-class families who farm by choice, not necessity. Their aspirations have more to do with living in the country than growing into bigger, more profitable farm businesses.

If you're a typical minifarm operator, you are 51 years old and live on 77 acres. You raise beef cows and your major crop is hay. You work off the farm at least 200 days a year. Your farm loses money, but your household income averages over $20,000 a year because of off-farm work.

How does the structure of minifarms measure up against the larger enterprises? Brooks cites figures:

In short, minifarms are generally owned by middle-class families who farm by choice, not necessity.

- Minifarms operated 10 percent of all land in farms in 1978.
- They held 7 percent of the value of agricultural land and buildings.
- They held almost 6 percent of the value of machinery and equipment.

Tenure and Organization

"Tenure and organization are important characteristics of any class of farms," Brooks says. "Minifarm operators are more likely to own the land they farm and also more likely to operate sole proprietorships than their larger counterparts."

In terms of tenure, 80 percent of all minifarm operators owned all the land they farmed. Twelve percent rented some land, and only 8 percent were tenants. Farmers in larger sales classes were more likely to rent additional land, usually to expand the size of their operations. Slightly over half were full owners, about one-third worked a combination of owned and rented land, and less than one-tenth were tenants.

Almost all minifarms—94 percent—were sole proprietorships or family farms, compared with 86 percent for their larger counterparts. The remaining minifarms were operated as partnerships and corporations.

In terms of commodities, Brooks says, minifarm operators tend to specialize. Brooks' analysis listed five major crop categories: hay, corn, orchard crops, tobacco, and wheat. However, most of the cropland on minifarms is not harvested. "Although the majority of the harvested cropland in 1978 was in hay, there was little income generated by the sale of hay, or any other crop," Brooks says.

In livestock, minifarm operators produced cattle and calves (primarily beef cows), hogs and pigs, sheep and lambs, and chickens (in that order).

Minifarms accounted for about $950 million in agricultural product sales in 1978, with average farm income of $1,152 and operating expenses of $1,454.

Geographically, the South has the most minifarms—54 percent of the total—followed by the North Central states at 25 percent. The West has 14 percent and the Northeast 7 percent.

As a percent of all farms in each region, minifarms scored about the same in the South, Northeast, and West (from 29 to 33 percent). Only in the North Central states did minifarms make up a relatively small proportion—just 15 percent—of all farms in the region. □

[*Based on information provided by economist Nora L. Brooks of the National Economics Division, Economic Research Service.*]

Penniless on Paper, But Don't Make Policy On It

Farm income statistics put minifarm operators at the lowest end of the scale—yet off-farm income sources increase their total incomes to a level equal to or higher than all but the largest commercial farms.

Commodity support policies, resource conservation policies, and services needed in rural areas are all influenced to some extent by the perception that farm families depend primarily on their farming activities for income.

This may really be off the mark for minifarms, as well as for many other small farms, according to economist Nora Brooks. Her analysis strongly suggests that most minifarms are maintained primarily as rural residences. Minifarm operators depend heavily on off-farm or retirement incomes to supplement or finance their farming activities. This is generally not reflected in aggregate farm income statistics and other indicators that are used to formulate policy.

Brooks contends that agricultural and rural policies should be considered in light of the large presence of small and minifarms in the farming sector.

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Brazil's Economic Troubles Take a Toll on U.S. Trade

Brazil's battle to revive a stumbling, debt-drained economy could be the key to future growth in its purchases of U.S. agricultural products.

A recovering economy—matched with U.S. market incentives such as favorable credit programs—could help keep Brazil among America's top 20 farm export buyers. On the other hand, continued economic stagnation would stall any resumption in trade growth at a time when the United States already faces heightened competition from rival suppliers.

This mixed picture is offered by economists Myles Mielke of USDA's Economic Research Service, and Samuel Ruff, formerly of ERS. Ruff and Mielke recently co-authored an export market profile on Brazil.

U.S. exports to Brazil grew along with the Brazilian economy in the 1970's, surpassing $700 million in both 1980 and 1981 to comprise about a third of the country's total agricultural imports. In the last 2 years, however, U.S. exports have declined, falling to $526 million in 1982 and $479 million in 1983.

"The ground rules governing Brazil's trade for the next few years are being written by the country's foreign debt problem," says Mielke. "To slow further accumulation of debt, Brazil is trying to boost its exports and keep nonessential imports to a minimum through taxes, tariffs, and other barriers."

The squeeze is affecting all of Brazil's trading partners, but the United States probably has the most to lose. It is the largest exporter, and its huge share of the market is a tempting target for other suppliers eager to limit their losses.

Sales Linked to Credit

Given Brazil's troubles, credit may be the pivotal tool in the jockeying for position. "To the extent that the United States can provide the credit that Brazil desperately needs, this will assure a continuing large share of the wheat market against Canadian and other competition," says Mielke. "Credit may even be a useful tool for improving access to other commodities, including rice, as long as the debt situation remains critical."

The ground rules governing trade are being written by Brazil's heavy foreign debt.

Credit incentives apparently helped Canada carve out a piece of the traditionally U.S. market for wheat—Brazil's largest agricultural import.

"Despite numerous attempts to increase wheat production, Brazil continues to import more than it grows," says Mielke. "Because of a warm and wet climate that promotes crop disease, production shortfalls are persistent even with huge investments and high price supports."

About half of Brazil's food import bill goes to buy wheat in world markets. In 1981, the United States supplied 77 percent of Brazil's wheat, but will have difficulty recapturing that share in the future.

Canada has taken a portion of the wheat market and is staking out more, signing a 1982 agreement to provide wheat imports of 1 to 1.5 million tons a year for 3 years on undisclosed credit terms. "Canada's advantage is high-quality wheat that blends well with Brazil's domestic wheat, and sales are made even more attractive by the multi-year credit terms," notes Mielke.

He says that through 1990, "wheat will continue to dominate the import scene and will dwarf imports of most other products. Brazil will likely add 500,000 tons of wheat through the rest of the decade to its current imports of 4.4 million tons to meet the needs of a growing population."

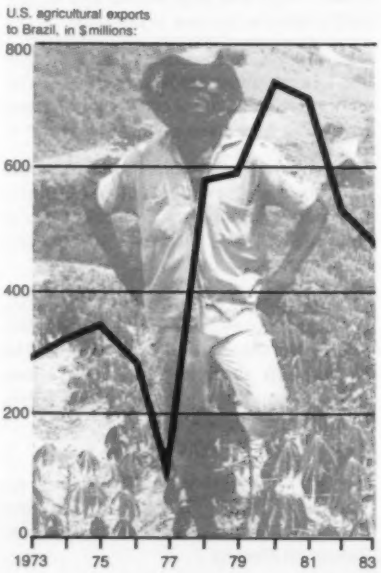
In addition to Canada, other significant suppliers to Brazil are the European Community countries and the Latin American Integration Association (LAIA), which includes most of the major Latin American countries. The European Community has made important inroads in selling high-value products to Brazil, including malting barley, malt, dry milk, cream, wine, and fresh potatoes.

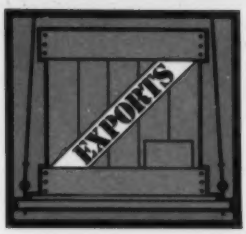
Like the Sword of Damocles

Brazil's large debt, though, looms over the food import outlook, and "may have lowered consumption in 1983 because of stricter austerity measures than anticipated." At the end of 1983, Brazil's debt had reached $90 billion, the world's highest.

It was an ignominious decline from what had been hailed as the "Brazilian miracle," beginning in 1967 and continuing through 1980. During the early years of this spectacular economic surge, annual growth rates reached 8 percent and higher. Brazil was cited as a model for developing countries intent on accelerating their economic progress.

U.S. Farm Sales Fall as Brazil's Economy Falters





Melding money, industry, and agricultural resources, Brazil became a "textbook example of development," says Mielke.

"Sharply increasing exports and large volumes of imported capital were the twin engines driving the achievement. Although oil prices increased significantly in 1973, economic growth continued at a level of 6 to 8 percent until 1980 when high interest rates and sagging world markets brought on a recession," he says.

"Petroleum imports, which supply 80 percent of total oil needs, increased rapidly after 1973. Along with increased imports of other products, the oil bill drove Brazil to increase its dependence on international loans," Mielke says. "Servicing this debt and paying the petroleum import bill of $9 billion used up most of Brazil's 1981 export earnings of

Brazil in Brief

With a population of 122 million, Brazil is the most populous country in South America.

Geographically, it is also the fifth-largest nation in the world (the United States is fourth), spreading over almost half of the continent and sharing common borders with every South American country except Ecuador and Chile.

Its physical proximity to Spanish-speaking neighbors does not diminish its distinct cultural identity and heritage, however.

Brazil is a Portugese-speaking country, the only one in the Americas, a legacy of its discovery in 1500 by Portugese navigator Pedro Cabral. Colonized by succeeding waves of immigrants from Portugal, and later, other European countries, Brazil declared its independence from Portugal in 1822.

Nearly 500 years of settlement, though, has not enabled the Brazilians to develop much of the country beyond a 200-mile wide coastal corridor that includes most of the major cities.

Brazil's southern area is its most productive. It has temperate rainfall and the best soils, and produces the bulk of the country's domestic food and export crops. The northeast is noteworthy for its lack of rainfall, poor soils, limited infrastructure, and potential.

The country is generally divided into five agricultural production

areas on the basis of soils and climate:

- *North:* largely humid tropics; some rice, manioc, pepper, Brazil nuts.
- *Northeast:* dry area with largely subsistence farming; sugar and cocoa grown on narrow rain-fed coastal section.
- *Central-West:* savannah land, considered world's largest soil bank; some wheat, rice, soybeans, corn, cattle.
- *Southeast:* subtropical and temperate zone climate; sugarcane, coffee, oranges, cotton, rice, corn.
- *South:* temperate climate; the two southern states of Parana and Rio Grande Do Sul are the primary wheat and soybean producing areas, with substantial rice and corn acreage also.

The country is making a major effort to develop new areas for cultivation in order to expand its exports. Soybean production, particularly, has begun on converted farmland in the southern and western states.

Brazil is also expanding its cultivation of sugarcane—used not only for sugar but as the raw material to produce ethyl alcohol fuel for gasohol used in automobiles and trucks.

In recent years, Brazil has begun tapping the rest of its extraordinary resources. Even though it is the third leading producer of hydroelectric power in the world and the builder of the world's largest dam, Brazil has exploited only an estimated 10 percent of its hydroelectric potential.

Proven mineral resources, as well, are extensive, and increasing with exploration. Especially large are iron and manganese reserves, which provide significant sources of industrial raw materials and export earnings. The search is on for further oil and high-quality coal deposits. Substantial reserves of low-grade coal are already being mined.

Politically, Brazil is passing through its most difficult period since a 1964 coup imposed a military government that continues in power today. Brazilians are looking to January 1985 for the return of civilian government. That's when indirect presidential elections are scheduled. The new president will be chosen by an electoral college comprised of legislative delegates chosen in popular elections.

U.S. exporters can sell more to Brazil, but they may have to extend additional credit.

$23 billion, leaving little to pay for other imports."

Brazil's export earnings, meanwhile, suffered from the world economic recession which led many nations to trim imports and weakened prices for Brazilian products.

A major effort began in 1982 to further increase exports and reduce reliance on foreign capital and imports. This austerity program will likely last until 1985. Major imports through this period, says Mielke, will probably continue to be oil, cereal grains, and capital goods for development, including equipment for gasohol and hydroelectric power. Brazil is the world's leading producer and user of gasohol.

Toward a Stronger Farm Sector

"Agriculture was strengthened and modernized during the 1970's growth period, fueled by one of the most aggressive agricultural credit programs in the world," says Mielke. Although the country did not become self-sufficient in wheat, it did substantially boost production of that crop and others, including some for export.

"Wheat, corn, rice, soybeans, and poultry dominate Brazil's agriculture. Wheat's long record of imports is traced to domestic production failing to meet growing demand," he says. "Corn, Brazil's primary livestock feed, has been imported in large quantities when needed to meet weather-induced production shortfalls. Rice is the most important staple, and small quantities are imported periodically. Brazil is one of the world's largest rice producers. Other large-scale domestic crops include beans, cassava, potatoes, and bananas."

Brazilian exports include soybeans and poultry, both of which compete with U.S. supplies in world markets. Other major export items are coffee, cocoa, oranges and orange juice, cotton, and tobacco.

Brazil is cultivating new areas of land for crops. Here, farmers plant groundnuts in northeastern Brazil.

"Aside from wheat, Brazil's food imports mainly serve to satisfy consumer demands for processed and high-value items and to support agricultural production," Mielke says. Among the items in the latter category are hatching eggs, live beef and dairy cattle, and seeds for planting. Inedible tallow is imported for the soap and cosmetic industries.

Mielke says U.S. exporters can sell more to Brazil by continuing to extend favorable credit terms for wheat and by taking advantage of "opportunities which arise when exceptions are made to accommodate special national needs."

Those opportunities can range from the temperate zone fruits, particularly pears and apples, that occasionally receive reduced duty rates to imports of corn, rice, and beans that are required in years of drought or low stocks.

Exporters should also be aware that "minimum restrictions or duty-free status applies generally to breeding cattle, breeding horses, baby chicks, hatching eggs, seeds, and seed potatoes." Similarly, soybeans and inedible tallow are imported duty-free because of their importance to domestic industries.

And exporters should not overlook the lucrative high-value market, including malt, butter, cheese, beef, and wool, which the "United States can open with export development." □

[*Based on information provided by Myles J. Mielke of the International Economics Division, Economic Research Service, and Samuel R. Ruff, formerly of the Economic Research Service. A copy of their report,* ***Brazil: An Export Market Profile,*** *can be purchased for $1.50 from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Ask for the report by title and Stock Number 001-000-04396-0. Visa and MasterCard orders can be taken by telephone at (202) 783-3238.*]

Are We Ready for Irradiated Foods?

Food irradiation is getting a boost from an unusual ally: EDB. Concern over the safety and effectiveness of chemical fumigants, such as EDB, is focusing new attention on a not-so-new food preservation process.

First patented in France in 1930, food irradiation is currently stirring up discussion—and controversy—among consumer and scientific groups, the food industry, government agencies, and Congress.

Some groups advocate irradiation as the safe nonchemical alternative that the food industry is looking for, according to economist Rosanna Mentzer Morrison of USDA's Economic Research Service. Other groups call for caution and further testing before irradiation of food is given a broader stamp of approval.

The momentum now seems to be running in favor of irradiation at low doses for certain food uses.

In February, the Food and Drug Administration (FDA) proposed a new rule that would permit food irradiation at low doses to delay ripening of fresh fruits and vegetables and to disinfest food of insects. The proposed rule would also allow spices, a small portion of our diet, to be irradiated at higher doses. The proposal preempted congressional action on bills with similar objectives that had already been introduced in the House and Senate.

A new bill introduced in the House this spring calls for a joint operating commission to coordinate federal and private sector research and development of food irradiation. A recent hearing by the House agriculture committee on alternatives to EDB attracted further attention to irradiation.

Why this resurgence of interest in food irradiation?

"The time is right," says Morrison. "The ban on EDB has left the public and industry wary of chemical fumigants. Meanwhile, irradiation is being used on a variety of foods in several other countries, so it's not surprising that this technology is in the spotlight."

Some Food Irradiation Now Legal

Actually, irradiation is already permitted on a few foods for domestic U.S. consumption. It has been legal for use on wheat and wheat flour since 1963, on potatoes since 1964, and on spices since July 1983.

Commercial food uses of irradiation in the United States today are confined to reducing microbial contamination of spices and occasionally treating fruits and vegetables for shipment overseas. One contract sterilizer in New Jersey reports that he irradiates between 5 and 6 tons of spices a week. Most of these spices are used in processed foods or spice and flavoring blends. Cleaner spices extend the shelf life of the meat products in which the spices are used. Irradiation has also been employed in special cases to sterilize food for space shuttle astronauts and hospital patients with immunity deficiencies.

Experimental studies on the irradiation of pork and poultry to rid them of trichinae and salmonella have been conducted by the U.S. Department of Energy and the Canadian government. USDA's Agricultural Research Service has been working on irradiation-related projects for 25 years.

According to Morrison, at least 18 other nations have approved the use of radiation for foods, and about 26 different foods are irradiated in different parts of the world. Some of these countries regularly irradiate certain foods, such as potatoes, onions, garlic, spices, strawberries, mangoes, papayas, frozen shrimp, chicken, and fish. Japan, for example, irradiates an estimated 15,000 tons of potatoes each year.

Also, the Codex Alimentarius Commission, an international organization that develops global food standards, has approved irradiation of food at doses 10 times that recommended for the United States in the recent FDA proposal.

What is food irradiation, then, and why have other countries been more receptive to it than the United States?

Irradiation involves the use of controlled doses of ionizing radiation in the form of X-rays, gamma rays, or high energy electrons on food to kill insects and reduce the number of microorganisms that cause spoilage.

The radiation breaks down chemical bonds in the pests' cells and, depending on the dosage, kills the organism or damages genes necessary for reproduction. At low doses, radiation interferes

Food Irradiation Is Legal In At Least 18 Other Nations

Argentina	Potatoes
Belgium	Potatoes, onions, garlic, shallots, spices, strawberries, paprika
Canada	Potatoes, onions, wheat & flour
Chile	Potatoes, onions, wheat & flour, spices, chicken, fish, rice, cocoa beans, dates, pulses, papayas, mangoes, strawberries
Denmark	Potatoes
France	Potatoes, onions, garlic, shallots, spices
Hungary	Onions, spices
Israel	Potatoes, onions, chicken
Italy	Potatoes, onions, garlic
Japan	Potatoes
Netherlands	Potatoes, onions, mushrooms, spices, chicken, fish, frozen fish, frozen shrimp, froglegs, rice products, rye bread, egg powder, blood proteins
Hungary	Spices
Philippines	Potatoes
South Africa	Potatoes, onions, garlic, chicken, papayas, mangoes, strawberries
Spain	Potatoes, onions
Thailand	Onions
Uruguay	Potatoes
USSR	Potatoes, onions, dry food concentrates, grain, dried fruits

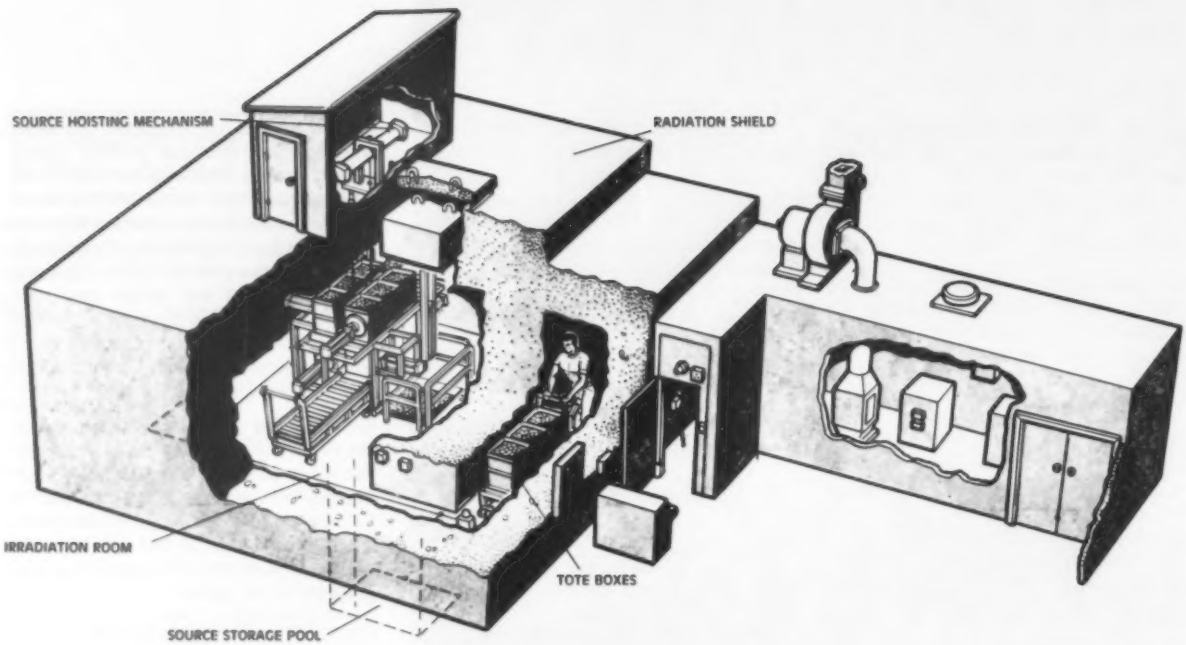


Diagram of an irradiator in use in South Africa for tropical fruits and strawberries. ***Courtesy of Atomic Energy of Canada, Ltd., Ottawa, Canada.***

with cell division and thereby inhibits unwanted sprouting of root crops, such as potatoes. Irradiation can also be used to delay the ripening of fruit. High doses can sterilize a food so thoroughly it can be stored in a container at room temperature for many years.

"This process does not make food radioactive," Morrison contends. "Scientists tell us that the absorbed doses of ionizing energy the foods receive are too low to cause radioactivity. The process causes changes in the chemical composition of food and, at low doses, may cause minor changes in composition and texture of some foods. Changes are more dramatic at higher doses, with some foods becoming mushy. Cooking causes changes in chemical composition, too."

Commercial use of irradiation in the U.S. food industry did not catch on for several reasons, although the idea enjoyed a brief popularity in the early 1950's. In 1958, however, Congress classified irradiation as a "food additive," not a process, and imposed tight regulations and labeling requirements on its use. These regulatory barriers, large start-up costs for irradiation treatment facilities, and uncertainty about consumer acceptance have stalled commercial development.

Another factor, certainly, is that chemical fumigants and preservatives have been readily available and relatively inexpensive. Moreover, a well-developed food marketing system speeds perishables to consumers, so spoilage is not as serious a problem as it is in many other nations.

Who Benefits?

The renewed attention to food irradiation raises questions: Who would benefit from its use? Is it economically feasible? Is it hazardous? Will consumers accept irradiated foods? Not all of these questions have definitive answers.

Given consumer acceptance, there's little doubt that food processors could benefit from the use of irradiation on some foods. It would extend the shelf life of products and reduce spoilage in the shipping of products interstate and internationally. Once large-scale irradiation facilities are in place, the cost may be no greater, and possibly less, than the cost of using chemical fumigants.

On the other hand, food processors face start-up costs now estimated in the $2-$3 million range per treatment facility. They would also have to deal with engineering problems in moving large volumes of food through an irradiator. And not all foods can be successfully irradiated; some foods turn brown or mushy, and others, such as milk products, develop an off-flavor.

Consumers would benefit, too, according to advocates of irradiation. Longer shelf life of food, at the grocery and at home, could reduce spoilage losses.

"A basic fact about irradiation is that it kills or reduces the number of pests and microorganisms present in food," says Morrison. Scientists estimate that as much as 30 percent (perhaps more in

developing countries) of the world's harvested food supply is lost through insect infestation and spoilage. Irradiation could reduce these losses if the facilities were available.

At doses higher than FDA is currently proposing, irradiation also rids food of disease-causing organisms such as salmonella. Still higher doses rid foods of bacteria that cause botulism. Finally, irradiation could reduce the use of potential carcinogenic preservatives and toxic chemical fumigants.

Irradiation is not the only alternative to chemical fumigants, however. Food sterilization processes, such as introducing a controlled atmosphere of carbon dioxide, steam cleaning, and alternate heat and cold treatments will continue to be used for certain foods.

Concerns About Food Irradiation

Concerns about irradiation hinge, for the most part, around the effects of irradiated food on people—and the effects of radiation technology on workers and the environment.

Some consumer groups question current radiation technology and urge more study, especially of higher dose irradiation.

"We believe that this issue is critically important to the future health of consumers," says Ellen Haas of the Public Voice for Food and Health Policy. She urges FDA to proceed slowly and cautiously in approving irradiation. There is no final conclusion on the safety of irradiation, she points out.

Some groups worry about the transportation and safe disposal of radioactive materials used in the irradiation process. The answer may be specially sealed containers developed by the Department of Energy. Advocates of irradiation are quick to point out radiation is already all around us, in the atmosphere and in the workplace in many industries.

For some others, concern centers on evidence of the presence of unique radiolytic products, or URPs, which are substances not found in food before it is irradiated. These particles are present in such minute quantities they're difficult to detect. Scientists have found many URPs to be similar in structure to natural food constituents.

One unresolved issue is whether retail packages of irradiated foods must carry a label or symbol.

The FDA says that the safety of food irradiation at the low level it proposes (not to exceed 100 kilorads) has been established. In its February proposal, the agency states: Irradiation will not make the food radioactive, and thus cannot expose the consumer to radiation; and the chemical differences between irradiated foods processed at these doses and nonirradiated foods are too small to affect the safety of the foods.

One important, unresolved issue is whether retail packages of irradiated foods must carry a label or symbol, as they do in the Netherlands and South Africa, informing consumers that foods have been irradiated.

Even if all the major questions are resolved to everyone's satisfaction, however, the real battle may be in the marketplace. No one takes consumer acceptance of food irradiation for granted. □

[*Based on information provided by economist Rosanna Mentzer Morrison of the National Economics Division, Economic Research Service.*]

Foods, Doses, Labels

FDA's proposed regulation for irradiation would permit food to be irradiated:

- to inhibit the growth and maturation of fresh fruits and vegetables at doses not to exceed 100 kilorads.
- to disinfest food of insects at doses not to exceed 100 kilorads.
- to disinfect spices of microbes at levels not to exceed 3,000 kilorads, up 2,000 kilorads from the existing standard.

The proposal would also establish requirements for persons irradiating food and change the existing labeling requirement.

Firms would be required to have "a qualified person with expert knowledge of radiation processing" develop a scheduled process specifying the dose range needed to achieve the intended effect. Secondly, a food irradiation processor would be required to maintain specific records open to FDA.

Under existing regulations, any retail irradiated food must be labeled "Treated with ionizing radiation" or "Treated with gamma radiation." Wholesale packages or bills of lading must also add the phrase "do not irradiate again."

In the proposed rule, however, FDA is reversing this position for retail foods. The proposal states: "The Agency now believes that there is no need for a special label on irradiated foods because this proposal would limit the conditions of use of irradiation to those that have already been shown to be safe." Wholesale food containers will continue to carry the required label, "Treated with ionizing radiation—do not irradiate again."

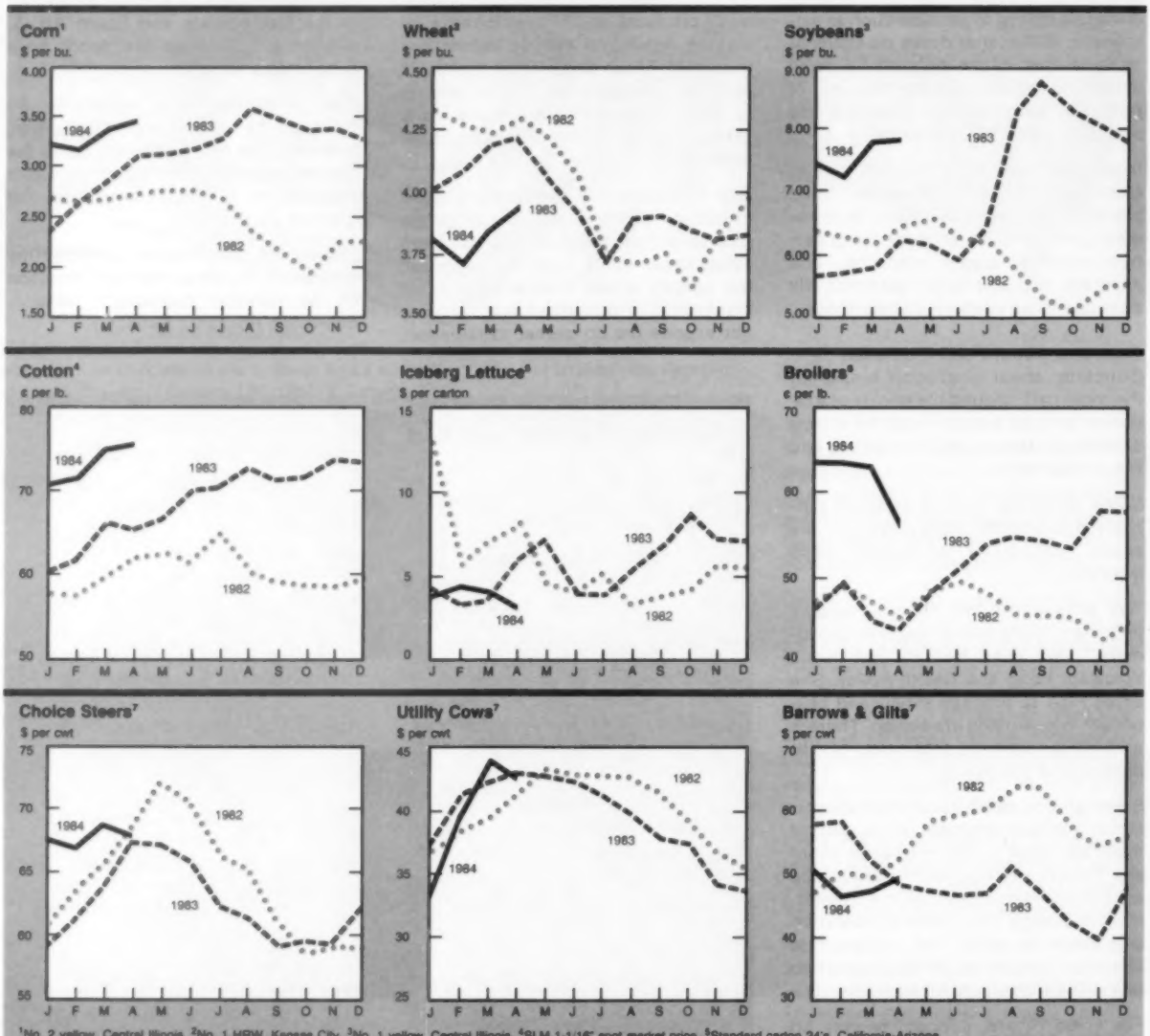
In the proposal, FDA encourages comments on the labeling issue and states that it will continue to review new information on the subject.

FARMLINE TRENDS

Monthly Price Monitor

USDA's April index of farm prices rose seven-tenths of 1% from March and was 7.4% above the year-earlier level. Wholesale markets (below) registered gains for corn, wheat, soybeans, and cotton.

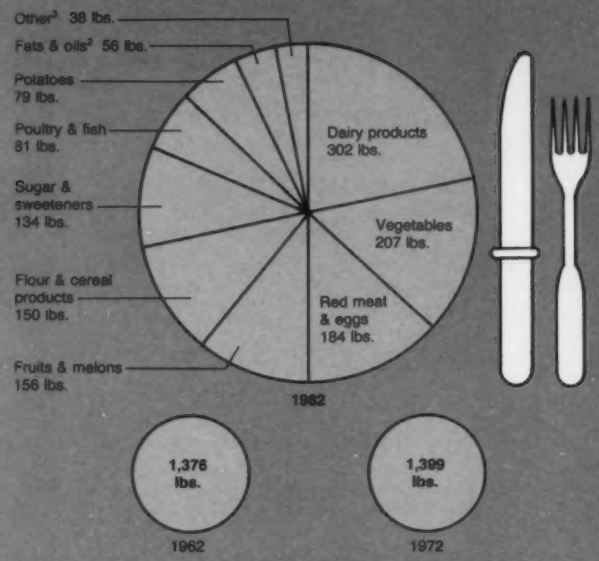
Wheat reached $3.94 per bushel, the highest since May 1983. Cotton hit 75.6¢ a pound, the highest since June 1981. Lettuce prices declined to the lowest monthly average in years. In the meat area, broilers dropped below 57¢ a pound after holding in the 63¢-64¢ range for 3 months. Choice steers and utility cows edged down from March peaks, while barrows and gilts rose to near $49 per cwt. It was the first time in 13 months that hog prices exceeded year-earlier levels.



[1]No. 2 yellow, Central Illinois. [2]No. 1 HRW, Kansas City. [3]No. 1 yellow, Central Illinois. [4]SLM 1-1/16" spot market price. [5]Standard carton 24's, California-Arizona. [6]Wholesale, New York. Monthly average prices since May 1983 may not be strictly comparable with prices for previous months. [7]Omaha.

America's Menu

Americans Consumed an Average of 1,387 Pounds of Food Per Capita in 1982[1]



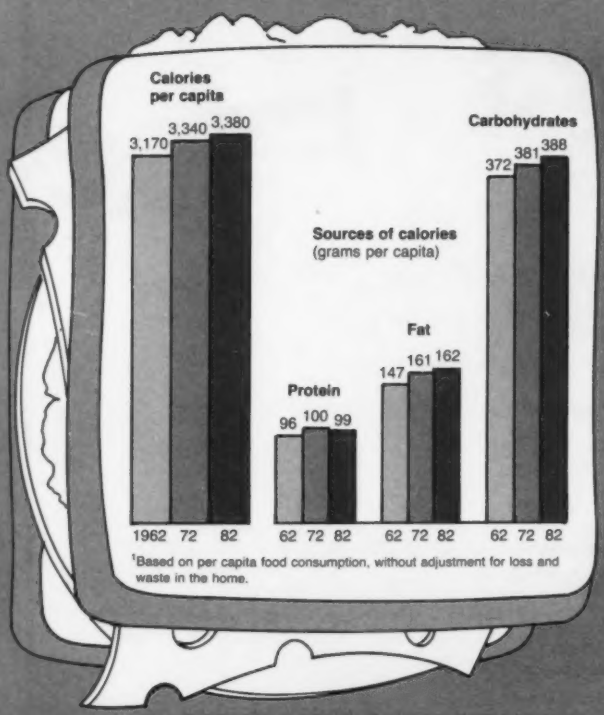
[1]Includes game meat and home-grown fruits and vegetables. [2]Does not include "invisible" fats consumed in meats, milk, and other products. [3]Lentils, nuts, coffee, tea, spices, etc.

Consumption Figures For Individual Foods Show Some Gainers . . . And Some Losers

	1962	1972	1982	Change, 1962-82
	pounds per capita			percent
Some gainers				
Lowfat milk[1]	32.0	68.3	100.2	+213%
Beef	66.2	85.4	77.3	+17%
Chicken	29.8	41.8	52.9	+78%
Soft drinks (gallons)	16.1	25.4	39.6	+146%
Fresh lettuce	18.4	20.9	23.5	+28%
Bananas	15.8	18.0	22.6	+43%
Cheese[2]	9.2	13.1	20.1	+118%
Frozen potatoes	3.8	12.2	18.1	+376%
Rice	7.4	7.0	11.8	+59%
Frozen OJ[3]	5.2	7.9	9.5	+83%
Canned apple juice	1.1	2.6	7.2	+555%
Frozen broccoli	0.6	1.0	1.5	+150%
Some Losers				
Whole milk	252.4	200.6	133.3	-47%
Sugar	97.9	102.3	75.2	-23%
Fresh potatoes	74.4	54.3	46.7	-37%
Eggs (dozen)	27.2	25.3	21.9	-19%
Fresh oranges	15.1	14.1	12.3	-19%
Coffee	11.8	10.4	7.5	-36%
Butter	7.3	4.9	4.5	-38%
Fresh peaches	7.7	3.7	3.8	-51%
Lard	7.1	3.7	2.4	-66%

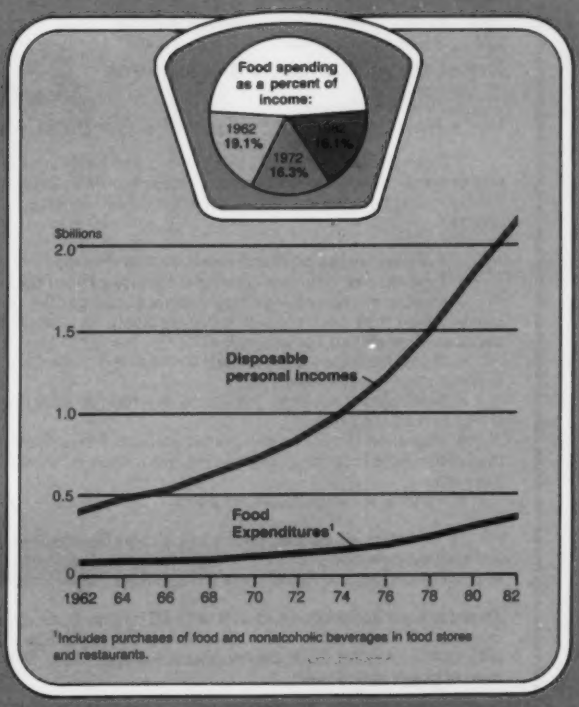
[1]Includes skim, buttermilk, and flavored drinks. [2]Natural equivalent. [3]Product weight.

The Calorie Count Is Up Since 1962, With Most of the Increase from Fats and Carbohydrates[1]



[1]Based on per capita food consumption, without adjustment for loss and waste in the home.

But the Calories Come Cheaper When Food Bills Are Measured Against Incomes



[1]Includes purchases of food and nonalcoholic beverages in food stores and restaurants.

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